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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/037,785 | 10/22/2001 | Gang Sun | 18062G-004100US | 6976 |

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EXAMINER

EINSMANN, MARGARET V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1751

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,785

Applicant(s)

SUN ET AL.

Examiner

Margaret Einsmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-8, 10-15 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-8, 10-13, 15, 35-37 is/are rejected.
- 7) ☐ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 9, 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The declaration of Gang Sun and Dapeng Li under 37 CFR 1.131 predating Cramer et al. is sufficient to overcome the rejection of claims 1-8, 10-13, 15, 35-37 as obvious over Cramer et al.

Claims 1, 6, 8 10-13, 15, 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over CN 1241661 and over CN 1306117A . Silver and silver oxide are between or on fabric fibers to treat infection from wounds and fungi.

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Regarding CN 1241661, note the Implementation examples on pages 20 and 21. Silver oxide and silver are formed in situ in the fabric by immersing the fabric in solution of silver nitrate and oxidizing agent. The fabric is then ironed or thermally compressed until yellowish-brown. The yellow brown color indicates that the oxidation has taken place and the nanoparticles are indeed on the surface. Since the fabric was immersed in the treating solution, there are necessarily nanoparticles imbedded in the fabric.

It would have been obvious to the skilled artisan that the nanoparticles are imbedded at least in the surface of the fabric absent evidence to the contrary. It would be obvious that most if not all of the particles oxide particles are on the surface since patentee oxidizes the particles by ironing. However some of the imbedded are also oxidized absent evidence to the contrary. Note the claims. The particles are described as having silver oxide on the outside with the core being silver.

Regarding CN 1306117, the implementation method is a padding method. This is the only method disclosed by applicant for imbedding the particles into the fabric. Note page 21 where it states, "fully soak and roll" the cotton with an extraction rate of 60%. After that the cloth is dried. That is the same method as used by applicant. Absent evidence to the contrary, the product produced is a variation of the claimed product wherein the nanoparticles are distributed in a gradually diluted pattern, having a higher density near or at the surface of said textile and polymer system. Note also the claims.

Response to Arguments

Applicant's arguments filed 5/9/05 regarding the rejection of the claims as obvious over CN1241661 and over 1306117A have been fully considered but they are not persuasive. Applicant states that the amendment to claim 1 clearly differentiates from the two CN references. The examiner respectfully disagrees. Page 21 of '662 in implementation 3, lines 9 et seq. states "...use the electric iron or thermal compressor to iron the fabric until it is in yellow-brown color,..." This office interprets this step as a step of forming the silver oxide on the surface, with a reasonable possibility of silver oxide being formed in a gradually diluted pattern of distribution to the interior of the fabric as claimed. Note the claims of each application. Patentees are claiming that the particles are silver oxide particles with a core of silver giving the limitations of applicant's claims to both metal and metal oxide (claims 10-13)

Claims 1, 6, 8 10-13, 15, 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tedeco S. A., FR 2799392. Nanoparticles of oxides of tin, antimony, indium and cadmium are formed and textiles treated therewith. See abstract. Beginning on page 17 of the patent itself, there are examples of treating textiles with said nanoparticles. In example 2.1, nylon is treated in a bath of the dispersion of example 1 and heated. In examples 2.2, 2.3 and 2.4 nylon is treated with different dispersions in the same manner. Examples 2.5 and 2.6 treat polyester in the same manner. Patentee do not state that the nanoparticles are imbedded or to what extent the particles remain on the surface of the textile. It would have been obvious to the

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skilled artisan that the particles are imbedded in the textile and mainly remain on the surface, especially in the polyester, since the dispersion would not penetrate fully into the textile at the temperature of treatment, which appears to be room temperature, as it is known that polyester must be treated at high temperature and pressure, normally in a thermosol process, in order to open the textile for a disperse dye to penetrate into the textile.

Response to Arguments

Applicant's arguments filed 9/20/04 regarding the rejection of the claims as obvious over Tedesco have been fully considered but they are not persuasive. Applicant states that patentee does not teach the limitations of the claims. Since applicant applies the nanoparticles to the textile via a bath and heats the textile, (see above rejection) the textiles are impregnated with the nanoparticles. Applicant states that the particles are not diffused because the conditions in the FR patent for distribution in a gradually diluted pattern are not present. Applicant states that for a diffusion process there should be a high surface concentration of particle on the surface and heating to the glass transition temperature, and adequate time to effectuate the diffusion process. In all of the examples of this patent (beginning on page 17) the textiles are treated in a bath of the dispersions and heated. Applicant immerses his textiles in a padding bath and heats. The examiner asserts that the products are thus obvious variants of the claimed products absent evidence to the contrary.

Allowable Subject Matter


Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret Einsmann whose telephone number is 571-272-1314. The examiner can normally be reached on 7:00 AM -4:30 PM M-W and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0994.

7/20/05


Margaret Einsmann
Primary Examiner
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